

HABITAT OBSERVATIONS, RECORDS, AND NEW SOUTH AMERICAN THERIDIID SPIDERS (ARANEAE, THERIDIIDAE)

HERBERT W. LEVI

In a recent paper, Bonnet (1966) tells us that two-thirds of the spiders described have never been found again, and that of more than 22,000 spider species known in 1939, less than 3,000 are common or well described. This sorry record is evidence of the inadequacy of descriptions made by arachnologists who are often more interested in giving names than in studying the animals at hand. Bonnet cites as causes poor descriptions and insufficient bibliographic searches, but to these should be added the historic reluctance of many museum curators to let the biologists look at holotypes, as they must in order to make the needed revisions. Although this is mainly a problem of the past, yet even today several museums, following obsolete rules, so protect type specimens that their study can be arranged only years after the revision is completed. And when such study must be undertaken during a costly but hurried visit to the museum, often one finds the museum insufficiently equipped for the examination of small animals. Taking one's own equipment along complicates the customs passage and is made expensive by weight limits of airlines. However, I am grateful for the cooperation of the various curators who have made their collections and holotypes available to me. It is encouraging to find that a large proportion of the theridiid species described from South America have been rediscovered in the collections that have accumulated over the years in various museums.

These additional notes on the Theridiidae resulted from my visit to South America in 1965. I was able to see and work with the living spiders, and when possible made photographs and took notes on the habitats and habits. Also, I was able to examine the important Mello-Leitão collection in Rio de Janeiro. An earlier paper considered the spiders of Chile, which has its own, almost entirely endemic, fauna. This paper also contains additions and corrections to my previous papers on South American theridiid spiders. Another reason that drew me to South America, the field study of black widows, *Latrodectus*, is outside the scope of this paper.

I am very grateful to numerous colleagues who helped me. In Peru, Dr. H.-W. Koepecke and Dr. Maria Koepecke directed me to collecting places. Dr. P. Aquilar F. of San Marcos University took me into the field with his car every day I was in Lima. Dr. F. Carrasco Z. of Cuzco University took me to Urubamba and helped me collect. Dr. J. Abalos accompanied me and helped me in the field in northern Argentina. Prof. Dr. M. Birabén, Prof. R. D. Schiapelli, Mrs. B. Gerschman de Pikelin, Prof. M. E. Galiano and Dr. A. Barrio extended their hospitality to me in Buenos Aires. Dr. P. Vanzolini and Mr. P. de Biasi helped me reach the field in the São Paulo area. Dr. J. L. de A. Feio, Miss A. Timotheo da Costa, and Dr. J. de M. Carvalho and Director Dr. N. Santo permitted me to examine the valuable Mello-Leitão collection. Mr. Johann

Becker spent a great amount of his valuable time accompanying me in the surroundings of Rio and in the Organ Mountains and Teresópolis.

The paper is divided into two parts: first, corrections to previous papers, and second, notes, observations, and descriptions of new theridiid spiders.

ADDITIONS AND CORRECTIONS TO PREVIOUS PAPERS

After publication of my paper on South American arachnologists (Levi, 1964), a valuable letter was received from Dr. A. Riedel of the Polish Academy of Sciences. His comments, making corrections in the dates of the important Polish collector Jelski, were based on the archives of his institution. "Jelski left Poland in 1863 and stayed at first in the Balkans and France, but he visited Cayenne already in 1864. He left for Peru in 1870 and since 1874 worked in the Lima Museum and later returned to Poland in 1880."

Dr. H.-W. Koepeke and Dr. M. Koepeke made me aware that the locations of many of the old Peruvian collecting sites and haciendas can be found in German Stieglich's *Diccionario Geografico del Peru*, Lima, 1922. Few copies are to be found outside Peru, but there is one in the Harvard Widener Library. The area in which Jelski and Stolzman collected birds and spiders, the province of Tarma, Junín, was apparently chosen because of its great diversity in altitude, flora and fauna, reaching from the high Andes down to the haciendas of the Amazon Basin. It is a very fruitful area for collecting.

CORRECTIONS OF NAMES

Euryopis notabilis (Keyserling, 1891) [Not *E. notabila*] Levi, 1963a:136.

Dipoena rubella (Keyserling, 1884) [Not *D. rubellum*] Levi, 1963a:167.

Achaearanea dromedariformis (Roewer, 1884) [Not *A. dromedariforma*] Levi, 1963b:205.

A. rioensis Levi, 1963b:209. Holotype from Teresópolis, Est. Rio de Janeiro [not Guanabara], Brazil. The species is named after the state of the type locality.

A. alacris (Keyserling, 1884) [Not *A. alacre*], Levi, 1963b:227.

A. pinguis (Keyserling, 1886) [Not *A. pingue*], Levi, 1963b:228.

NOTES, OBSERVATIONS, AND DESCRIPTIONS OF NEW SOUTH AMERICAN THERIDIID SPECIES

Achaearanea tepidariorum (C. L. Koch)

Theridium tepidariorum C. L. Koch, 1841, Die Arachniden, 8:75, figs. 646-648, ♀ ♂. Syntypes from greenhouses at the University of Erlangen, Bavaria.

Achaearanea tepidariorum, Levi, 1955, Amer. Mus. Novit., No. 1718:32, figs. 69, 70, 83, 84, ♀ ♂; 1963, Bull. Mus. Comp. Zool., 129:215, map.

Collections. Specimens were collected on buildings in Tucumán, Argentina, and on top of Corcovado Mountain, Rio de Janeiro, in Teresópolis, but also (probably on buildings) at 1,850 m in the Serra dos Orgãos, Est. Rio de Janeiro, Brazil.

Achaearanea hieroglyphica (Mello-Leitão), new combination

Achaearanea hieroglyphica Mello-Leitão, 1940, Arg. Zool. São Paulo, 2:202. Female holotype from Colatina, Espírito Santo, Brazil, in the Museum Nacional, Rio de Janeiro; examined.

Chryso pentagona Caporiacco, 1954, Comm. Pontifica Acad. Sci., 16:75, fig. 12, ♀. Female holotype from Coudronville, French Guiana, in the Muséum National d'Histoire Naturelle, Paris; examined. NEW SYNONYMY.

Achaearanea pentagona, Levi, 1963, Bull. Mus. Comp. Zool., 129:202, figs. 1-3, ♀.

This species has also been collected in Huánuco State of Peru.

Achaearanea rioensis Levi

Achaearanea rioensis Levi, 1963, Bull. Mus. Comp. Zool., 129:209, figs. 36-38. Male holotype from Teresópolis, 900-1,000 m, Est. Rio de Janeiro, Brazil, in the American Museum of Natural History.

Collections. On top of Pico Corcovado, 700 m, Rio de Janeiro, Brazil.

Achaearanea hirta (Taczanowski)

Argyrodes hirtus Taczanowski, 1873, Horae Soc. Ent. Rossicae 9:119. Female syntypes from

Cayenne, French Guiana, in the Polish Academy of Sciences, Warsaw; examined.

Achaearanea hirta, -Levi, 1959, Bull. Mus. Comp. Zool., 121:70, figs. 35-38, ♀ ♂, map. Levi, 1963, *ibid.*, 129:212, map.

Collections. Specimens were collected in Tucumán, Argentina, on the outside of buildings of the Instituto Miguel Lillo. This is the southernmost record of the species.

Achaearanea passiva (Keyserling)

Theridium passivum Keyserling, 1891, Die Spinnen Amerikas, 3:195, pl. 7, fig. 141, ♀. Female holotype from Faz. Calvario, Est. Rio de Janeiro, Brazil, in the British Museum; examined.

Achaearanea passiva, -Levi, 1963, Bull. Mus. Comp. Zool., 129:207, figs. 26-28, ♀ ♂.

Collections. This southeastern Brazilian species was collected in the botanical garden, in forest, São Paulo, 10 April 1965 (P. de Biasi, H. Levi).

Achaearanea orgea sp. n.

Figures 5, 6

Holotype. Female from under stone in forest, Serra dos Orgãos, between 1,000 and 1,500 m, 20 April 1965 (H. Levi), in the Museum of Comparative Zoology. The specific name is an arbitrary combination of letters.

Description. Prosoma and legs dark orange-brown. Abdomen with black patches and a white line descending on each side, almost meeting on dorsum; there is a median dorsal white spot and a spot behind each white line on dorsum. Anterior median eyes slightly smaller than others, their diameter apart, less than a diameter from laterals. Posterior median eyes more than a diameter apart, less than their diameter from laterals. Abdomen almost spherical. Total length, 3.1 mm. Carapace 1.4 mm long, 1.4 mm wide. First femur, 1.8 mm; patella and tibia, 2.0 mm; metatarsus, 1.4 mm; tarsus, 0.8 mm. Second patella and tibia, 1.4 mm; third, 1.0 mm; fourth, 1.7 mm.

Diagnosis. This species might be either a *Theridium* or *Achaearanea*. It differs from

Theridium macuchi Levi from Ecuador by being larger, and the epigynum (Fig. 6) does not have a knob. It differs in coloration and larger size from *Achaearanea analista* Levi, from southeastern Brazil.

Echinotheridion cartum Levi

Echinotheridion cartum Levi, 1963, Bull. Mus. Comp. Zool., 129:236, figs. 117-121, ♀. Female holotype from Apa River, Paraguay, in the American Museum of Natural History.

Collections. BRAZIL. *Guanabara*: in forest, Pico da Tijuca, 500-950 m, 17 April 1965; in park, Jardim Botânico, Rio de Janeiro, 18 April 1965.

Theridium calcynatum Holmberg

Figure 1

Theridium calcynatum Holmberg, 1876, An. Agric. Rep. Argentina, 4:72. Types from Argentina lost.—Levi, 1963, Bull. Mus. Comp. Zool., 129:548, figs. 100-107, ♀ ♂, map 3.

Distribution. South America (except Chile) from Venezuela to Argentina.

Collections. PERU. *Lima*: Lima, in garden on the undersides of leaves and shrubs. *Cuzco*: Urubamba River near Machu-Picchu, collected by sweeping in rain forest; Urubamba, Feb. 1965 (F. Carrasco). BRAZIL. *Est. Rio de Janeiro*: forest, Serra dos Orgãos, 1,000-1,800 m. *Guanabara*: forest, Pico da Tijuca, 500-900 m. *São Paulo*: forest, in botanical garden, São Paulo.

Theridium rufipes Lucas

Theridium rufipes Lucas, 1846, Explor. Scient. de l'Algérie. Zool., 2(1):263, pl. 16, fig. 5, ♀. Female holotype from near Oran, Algiers.—Levi, 1957, Bull. Amer. Mus. Nat. Hist., 112: 56, figs. 188-193, ♀ ♂.

Distribution. Pantropical, in or on buildings.

Collections. PERU. *Lima*: females collected in the corner of the kitchen of a house in Miraflores, tightly appressed against the wall, with only a small web. The habitat in Peru was like that of Florida specimens I have collected. BRAZIL.



Figure 1. *Theridion calcynatum* Holmberg in web, garden in Lima, Peru.

Figure 2. *Anelosimus studiosus* (Hentz), dense web in shrub, Barra da Tijuca, Rio de Janeiro, Brazil.

Guanabara: on buildings on Corcovado, 700 m. *Est. Rio de Janeiro*: in corner inside house in Teresópolis.

Theridion adamsoni Berland

Theridion adamsoni Berland, 1934, Bull. B. P. Bishop Mus., 113:102, figs. 6–9, ♀. Female syntypes from Tahiti in the Bishop Museum, Honolulu; examined.

Theridion hobbsi, Levi, 1957, Bull. Amer. Mus. Nat. Hist., 112:62, figs. 198–199, 209, 213–214, ♀ ♂, map 28.

Distribution. Pantropical.

Collections. ARGENTINA. *Tucumán*: outside on walls of building of Instituto Miguel Lillo in Tucumán, April 1965. This is the southernmost record in the Americas.

Theridion volubile Keyserling

Theridion volubile Keyserling, 1884, Die Spinnen Amerikas, 2(1):37, pl. 2, fig. 19, ♀. Female lectotype from Amable María, 640 m, Junín, Peru, in the Polish Academy of Sciences, Warsaw; examined.

Distribution. Venezuela to Arequipa, Peru.

Collections. PERU. *Junín*: San Ramón, 80 m, plantation on edge of rain forest, near the type locality.

Theridion evexum Keyserling

Theridion evexum Keyserling, 1884, Die Spinnen Amerikas, 2(1):65, pl. 3, fig. 39, ♀. Female holotype from Spanish colony N. Granada, in the British Museum; examined. —Levi, 1959, Bull. Mus. Comp. Zool., 121:97, figs. 124–135, ♀ ♂, map 5.

Distribution. From southern Mexico, West Indies, to southern Brazil.

Collections. BRAZIL. *Est. Rio de Janeiro*: under leaf in forest of Serra dos Orgãos, 1,000–1,500 m, 20 April 1965, ♀ (J. Becker, H. Levi).

Theridion triguttatum Keyserling

Theridion triguttatum Keyserling, 1891, Die Spinnen Amerikas, 3:190, pl. 6, fig. 136, ♀. Female syntypes from Nova Friburgo, *Est. Rio de Janeiro* and Espírito Santo on the Rio Minas, Brazil, in the British Museum; examined. —Levi, 1963, Bull. Mus. Comp. Zool., 129:542, figs. 76–77, ♀.

Distribution. Southeastern Brazil.

Collections. BRAZIL. *Guanabara*: Pico da Tijuca, 500–950 m, 17 April 1965, ♀ (J. Becker, H. Levi).

Theridion sexmaculatum Keyserling

Theridion sexmaculatum Keyserling, 1884, Die Spinnen Amerikas, 2(1):82, pl. 4, fig. 51, ♀. Female syntypes from Amazonas, Brazil, in the Hope Department of Entomology, Oxford University; examined. —Levi, 1959, Bull. Mus. Comp. Zool., 121:119, figs. 236–239, ♀ ♂.

Distribution. West Indies to Ecuador.

Collections. BRAZIL. *Guanabara*: Barra da Tijuca, sand dunes and dune vegetation, 16 April 1965, ♀ (J. Becker, H. Levi). This is the southernmost record.

Theridion plaumanni Levi

Theridion plaumanni Levi, 1963, Bull. Mus. Comp. Zool., 129:583, figs. 244–248, ♀ ♂, map 3. Female holotype from Nova Teutônia, Santa Catarina, Brazil, in the Senckenberg Museum, Frankfurt.

The species, otherwise colorless, has a tiny black spot on the anterior face of each patella and distal end of each tibia.

Distribution. From Venezuela to southern Brazil.

Collections. BRAZIL. *São Paulo*: Caminho del mar, 33 km south of São Paulo, in vegetation, 11 April 1965, ♀ (P. de Biasi, H. Levi).

Theridion humboldti sp. n. Figures 7–9

Holotype. Female from Miraflores, under leaf in garden, Lima, Peru, 6 Feb. 1965 (H. Levi), in the Museum of Comparative Zoology. This species is named after the explorer, A. von Humboldt.

Description. Carapace, sternum, legs light yellow-brown. Abdomen with white pigment spots on dorsum, three pairs of black patches, the last one running to spinnerets and fusing (Fig. 7). Area between, close to spinnerets, white. Venter with a black spot on each side of spinnerets. On each side of abdomen, a black streak. Eyes subequal in size, anterior median eyes one

diameter apart, their radius from laterals. Posterior eyes a little more than a diameter from each other. Total length, 5 mm. Carapace 2.0 mm long, 1.7 mm wide. First femur, 3.0 mm; patella and tibia, 3.0 mm; metatarsus, 2.7 mm; tarsus, 0.8 mm. Second patella and tibia, 2.1 mm; third, 1.5 mm; fourth, 2.5 mm.

Diagnosis. *Theridion humboldti* differs from *T. calcynatum* by having two black spots on a common depression in the epigynum (Fig. 9), and heavily sclerotized wide connecting ducts (Fig. 8).

***Chryso pulcherrima* (Mello-Leitão), new combination**

Argyrodes pulcherrimus Mello-Leitão, 1917, *Broteria*, 15:86, figs. 7, 8, ♀. Female holotype [fragments] from Manguinhos, Dist. Fed. [Est. Guanabara], Brazil, in the Museu Nacional, Rio de Janeiro; examined.

Meotipa clementinae Petrunkevitch, 1930, *Trans. Connecticut Acad. Sci.*, 30:212, fig. 61, ♀. Female holotype from Puerto Rico, at the Peabody Museum, Yale University, New Haven. NEW SYNONYMY.

Chryso clementinae, Levi, 1962, *Psyche*, 69:231, figs. 71-75, ♀ ♂, map 1.

Note. *Argyrodes pulcherrimus* Mello-Leitão is not a synonym of *A. elevatus* (Taczanowski) as thought by Exline and Levi, 1962, *Bull. Mus. Comp. Zool.*, 127(2): 135.

***Thymoites palo* sp. n.**

Figures 10-12

Holotype. Female from Camino del mar, forest and fields 33 km south of São Paulo, Brazil, 11 April 1965 (P. de Biasi, H. Levi), in the Museum of Comparative Zoology. The specific name is an arbitrary combination of letters.

Description. Carapace yellow, eye area black. Sternum yellowish. Legs yellow except fourth, which has distal end of femur and distal end of tibia black (Fig. 10). Abdomen yellowish white except for two black spots, one behind the other, posterior one just above spinnerets. Anterior median eyes smallest, one and one-half diameters from each other, one and one-half diameters

from laterals. Posterior median eyes one and one-half diameters apart, two diameters from laterals. Total length, 1.3 mm. Carapace 0.69 mm long, 0.60 mm wide. First femur, 0.70 mm; patella and tibia, 0.69 mm; metatarsus, 0.42 mm; tarsus, 0.36 mm. Second patella and tibia, 0.54 mm; third, 0.43 mm; fourth, 0.65 mm.

Diagnosis. *Thymoites palo* differs from *T. villaricaensis* Levi from Paraguay in having smaller eyes, and by its coloration (Fig. 10).

***Thymoites urubamba* sp. n.**

Figures 13, 14

Holotype. Female from Urubamba River forest below Machu-Picchu ruins, on vegetation, 2,000 m, Cuzco, Peru, 21 Feb. 1965 (H. Levi), in the Museum of Comparative Zoology. The specific name is a noun in apposition after the type locality.

Description. Carapace, sternum, orange. Legs orange-brown, coxae and patellae much lighter. Abdomen yellow-white, without markings. Eyes silvery, without any black, and relatively small, subequal in size. Laterals on a joint small tubercle. Anterior median eyes two diameters apart, less than one diameter from laterals. Posterior eyes one and one-half diameters apart. Height of clypeus about four diameters of anterior median eyes. Abdomen oval, pointed behind. Total length, 1.8 mm. Carapace 0.8 mm long, 0.7 mm wide. First femur, 0.9 mm; patella and tibia, 0.9 mm; metatarsus, 0.6 mm; tarsus, 0.4 mm. Second patella and tibia, 0.8 mm; third, 0.6 mm; fourth, 0.8 mm.

Diagnosis. The ducts of this species are black (Figs. 13, 14), and quite similar to those of *Thymoites ebis* Levi from Brazil. However, the coils in *T. urubamba* are posterior to the seminal receptacles (Fig. 13), while in *T. ebis* they loop anteriorly.

***Thymoites machu* sp. n.**

Figures 15, 16

Holotype. Female from Urubamba River forest below Machu-Picchu ruins, 2,000 m



Distribution of *Tidarren fordum*. Numerous literature records of the species from Argentina were not mapped.

elevation, on vegetation, Cuzco, Peru, 21 Feb. 1965 (H. Levi), in the Museum of Comparative Zoology. The specific name is an arbitrary combination of letters.

Description. Carapace, sternum orange. Legs orange-brown; patella and coxae lighter; distal segments darker. Abdomen orange-white, without markings. Eyes silver with black rings. Anterior median eyes

largest, their diameter apart, one-third their diameter from laterals. Posterior median eyes two diameters apart, one and one-half diameter from laterals. Total length, 1.6 mm. Carapace 0.6 mm long, 0.6 mm wide. First femur, 1.2 mm; patella and tibia, 1.8 mm; metatarsus, 0.8 mm; tarsus, 0.4 mm. Second patella and tibia, 0.7 mm; third, 0.6 mm; fourth, 0.9 mm.

Diagnosis. *Thymoites machu* is similar to *T. ilvan* Levi from Brazil but the ducts are straight and not undulating (Fig. 15).

TIDARREN Chamberlin and Ivie, 1934

No additional new species from South America have been found that belong to this genus. The minute males almost never are collected, although as many as ten have been seen in the web of a young female in Florida. Unlike members of *Achacaranca*, the female *Tidarren* nests in a rolled-up dead leaf in the middle of the web.

Misplaced species, described as *Tidarren*, from South America and Central America include:

Tidarren incertissimum Caporiacco = *Theridion incertissimum* (Caporiacco).

Tidarren fordum (Keyserling)

Map

Theridion fordum Keyserling, 1884, Die Spinnen Amerikas, 2(2):387, pl. 1, fig. 9, ♀. Female holotype from "Sta. Fé de Bogotá" [Bogotá, Colombia], in the British Museum; examined.

?*Theridion maculosum* Keyserling, 1884, *Op. cit.* 2 (2):30, pl. 1, fig. 14, ♀. Female holotype from Venezuela ["Caracas" on specimen], in the Institut Royal des Sciences Naturelles de Belgique, Brussels; examined.

Tidarren fordum, Levi, 1955, J. New York Entomol. Soc., 63:73, figs. 49-57, 61-64, map.

Bertkau's description of *Theridium haemorrhoidale* (1880, Mém. Cour. Acad. Belgique, 43:78; holotype from Rio de Janeiro, lost) fits Brazilian specimens of this species. However, the type could not be located in Brussels, Bonn, or Frankfurt. The type of *T. maculosum* Keyserling is shrivelled up and in a poor state of preservation. It is smaller, but within the range of variation, and the abdomen is not higher than long (probably because it is shrivelled). While it is probable that specimens assigned to this species from North America to Colombia are all one species, it is possible (but unlikely) that several South American species are confused, as there are hardly any of the minute males of *Tidarren* in collections.

Distribution. Southern United States to Chile and Argentina (map). As the Argentine records are from the literature only, they have not been mapped.

COLEOSOMA O. P.-Cambridge 1882

The genus *Coleosoma* is unique in a number of ways. Three species having a wide distribution are known from the Americas. During my study of American theridiid spiders, no additional species were found. The numerous new records are listed below, as no common characteristic of their niches could be found. The males of all three species appear to be ant mimics, an observation first made by Mr. J. Beatty in Florida (unpubl.), while the females are web spiders living under vegetation. Not only do the species live in undisturbed habitats, but live *Coleosoma floridanum* appear frequently in shipping boxes, arriving in the United States from other parts of the world.

Coleosoma acutiventer (Keyserling)

Achaca acutiventer Keyserling, 1884, Die Spinnen Amerikas, 2(1):113, fig. 74, ♀. Female holotype from Maragnioc [Maraynioc, Jumin, Prov. Tarma], Peru, in the Polish Academy of Sciences, Warsaw; examined.

Coleosoma acutiventer, Levi, 1959, Breviora, Mus. Comp. Zool., No. 110:4, figs. 6-11, ♀ ♂, map 1.

The cymbium of the palpus of Peruvian specimens is more swollen than that of specimens from the northern portions of its range.

Distribution. Southeastern United States to southern Brazil.

Additional records. VENEZUELA. *Dist. Fed.*: Caracas, 1887-1888 (E. Simon). *Carabobo*: San Estebán, 1888 (E. Simon). COLOMBIA. *Amarca*: Guaduas (E. I. Schlinger, E. S. Ross). ECUADOR. *Napo-Pastaza*: Río Topo (H. E., D. L. Frizzell); *Guayas*: Guayaquil (H. E., D. L. Frizzell). *El Oro*: Buena Vista, 25 km SE of Machala (R. Walls). PERU. *Huánuco*: 100 km E of Tingo María, ♀ (E. I. Schlinger, E. S. Ross). BRAZIL. *Minas Gerais*: Caraça, 2

♀ [vial with 2 ♀ labelled "Caraça. Parag.," in Paris Museum]; *Est. Rio de Janeiro*: under logs and stones, Serra dos Orgãos, 1,500 m, 20 April 1965, ♀ (J. Becker, H. Levi).

Coleosoma floridanum Banks

Coleosoma floridana Banks, 1900, Canadian Entomol., 32:98. Male syntypes from Punta Gorda, Florida, in the Museum of Comparative Zoology; examined.

Coleosoma floridanum, -Levi, 1959, *Breviora*, Mus. Comp. Zool., No. 110:6, figs. 12-17, ♀ ♂, map 2.

Distribution. Pantropical, southeastern United States, Central America, West Indies to central Peru and Brazil.

Additional records. VENEZUELA. Mérida: Timotes (in Frankfurt Museum); *Dist. Fed.*: Caracas (E. Simon); La Guaira, 1887-1888 (E. Simon). *Carabobo*: San Estebán, 1888 (E. Simon). BRITISH GUIANA: Georgetown (A. M. Nadler). FRENCH GUIANA: Cayenne (A. M. Nadler). ECUADOR. *Guayas*: Milagro (H. E., D. L. Frizzell); Guayaquil (H. E., D. L. Frizzell). PERU. *Huánuco*: Monzón Vall., Tingo María (E. I. Schlinger, E. S. Ross). BRAZIL. *Pará*: in package which arrived from Belém in Cambridge, Mass., 7 Nov. 1961, ♀. *Pernambuco*: Recife (in Frankfurt Museum).

Coleosoma normale Bryant

Coleosoma normale Bryant, 1944, *Psyche*, 51:56, figs. 2, 5, 8, 10, ♀ ♂. Male holotype from Fort Myers, Florida, in the Museum of Comparative Zoology; examined.—Levi, 1959, *Breviora*, Mus. Comp. Zool., No. 110:3, figs. 1-5, ♀ ♂, map 1.

Distribution. North Carolina, Arizona, to southern Brazil (previously known only from northern South America).

Collection. BRAZIL. *Est. Rio de Janeiro*: among logs and stones, Serra dos Orgãos, 1,500 m, 20 April 1965, ♀ (J. Becker, H. Levi).

Helvibis chilensis (Keyserling)

Figures 17-21

Formicinoides chilensis Keyserling, 1884, *Die Spinnen Amerikas*, 2(1):215, pl. 10, fig. 129, ♀.

Female holotype "from Chile," in the Muséum National d'Histoire Naturelle, Paris; examined.

Helvibis chilensis, -Levi, 1964, *Trans. Amer. Microscop. Soc.*, 83:135, figs. 1-6, ♀.

Description. Male. Carapace, sternum, dark brown. Legs, including coxae, light brown; abdomen with scutum dark brown, soft area gray to whitish. Cephalothorax as illustrated, striated with fine grooves; stalk finely annulated; sternum punctate. Anterior median eyes one and one-half diameters apart, one diameter from laterals. Posterior median eyes a little less than one diameter apart, one and three-quarters diameters from laterals; eyes subequal in size. Abdomen with the ventral shield (Fig. 19). Total length, 3.5 mm. Carapace, 2.2 mm long, 1.0 mm wide. First femur, 4.0 mm; other segments broken off. Second patella and tibia, 2.1 mm; third, 1.3 mm; fourth, 2.5 mm.

Discussion. This species was known only from the type, coming from "Chile." The type locality has been questioned. The male that probably belongs to this species comes from the Amazon Basin, as do all other species of *Helvibis*.

Record. BRAZIL. *Amazonas*: Benjamin Constant, Sept. 1963, ♂ (K. Henks, São Paulo Museum).

Episinus cognatus O. P.-Cambridge

Episinus cognatus O. P.-Cambridge, 1893, *Biologia Centrali-Americana, Araneidea*, 1:109, pl. 15, fig. 2, ♂. Male holotype from Teapa, Tabasco, Mexico, in the British Museum.—Levi, 1955, *J. New York Entomol. Soc.*, 62:71, figs. 8-10, 21, 22, 33, 41, ♀ ♂; 1964, *Bull. Mus. Comp. Zool.*, 131:13, map.

The southernmost record of this species is Quincemil, 750 m, Cuzco, Peru, Sept. 1962 (L. Peña).

Episinus rio sp. n.

Figures 22-24

Holotype. Female, from sweeping in forest on Pico da Tijuca, 500 to 950 m, Rio de Janeiro, *Est. Guanabara*, 17 April 1965 (H. Levi), in the Museum of Comparative Zool-

ogy. The specific name is an arbitrary combination of letters.

Description. Carapace yellow-brown with a black line around margin, eye area reddish. Sternum black. Distal ends of leg segments darker. Transverse black pigment band at widest part of abdomen. Anteriorly, two lateral dark patches; venter with black pigment, darker posteriorly. Two distinct horns between eyes. Anterior median eyes largest, others silvery with small lenses on modified opaque lens. Abdomen subtriangular without nipples, but with two distinct depressions on dorsum (Fig. 24). Total length, 1.9 mm. Carapace, 0.8 mm long, 0.8 mm wide. First femur, 1.6 mm; patella and tibia, 1.8 mm; metatarsus, 1.8 mm; tarsus, 0.7 mm. Second patella and tibia, 1.0 mm; third, 0.6 mm; fourth, 1.4 mm.

Diagnosis. This species is close to *Epinus bicruciatu*s (Simon) but differs in that the median area of the epigynum is wider than long (Fig. 23), while in *E. bicruciatu*s it is longer than wide. It differs from *E. aspus* Levi by lacking the anterior median dark area.

Epinus cuzco sp. n.

Figures 25–27

Holotype. Female and juvenile paratype from road up to Machu-Picchu ruins from railroad station, 2,100 m, in forest, Cuzco, Peru, 20 Feb. 1965 (H. Levi), in the Museum of Comparative Zoology. The species is named after the type locality, the specific name being a noun in apposition.

Description. Carapace whitish with a wide dark band on each side. Sternum and legs whitish. The anterior two-thirds of abdomen has scattered white and black pigment and some black pigment near posterior tip. Venter without pigment. Eyes silvery, except anterior medians, and with very small lenses on tubercle which is a modified lens. Abdomen with median dorsal tubercle (Fig. 25). Total length, 2.0 mm. Carapace 0.8 mm long, 0.8 mm wide. First femur, 1.8 mm; patella and tibia, 1.8 mm; metatarsus, 1.9 mm; tarsus, 0.6 mm.

Second patella and tibia, 1.1 mm; third, 0.8 mm; fourth, 1.3 mm.

Diagnosis. This species keys out to *Epinus juarezi* Levi but differs in the structure of the seminal receptacles and the epigynum (Figs. 26, 27).

Thwaitesia affinis O. P.-Cambridge

Figure 3

Thwaitesia affinis O. P.-Cambridge, 1882, Proc. Zool. Soc. London:431, pl. 31, fig. 8a, ♀ ♂. Syntypes from the "Amazon," in the Hope Department of Entomology, Oxford; examined. —Levi, 1963, Psyche, 70:231, figs. 14–19, ♀ ♂, map 2.

This species has been collected from under leaves in open shrubby vegetation, both near the city of São Paulo, and Barra da Tijuca, Est. Guanabara, Brazil.

Anelosimus ethicus (Keyserling)

Theridium ethicum Keyserling, 1884, Die Spinnen Amerikas, 2(1):44, pl. 2, fig. 24, ♂. Male holotype from Rio de Janeiro, Brazil, in the Naturhistorisches Museum, Vienna; examined. *Anelosimus ethicus*,—Levi, 1956, Trans. Amer. Microscop. Soc., 75:416, figs. 25, 28–30 ♀ ♂; 1963, *Ibid.*, 82:34.

The living spider has reddish pigment on dorsum of abdomen, particularly on sides of longitudinal band.

Distribution. Brazil from Ceara to Rio Grande do Sul.

Collections. BRAZIL. *São Paulo*: forest of botanical garden, in shrub, web in curled up leaves, ♀ ♂ (P. de Biasi, H. Levi).

Anelosimus studiosus (Hentz)

Figure 2

Theridium studiosum Hentz, 1850, J. Boston Soc. Natur. Hist., 6:274, pl. 9, fig. 5; holotype lost.

Anelosimus studiosus,—Levi, 1956, Trans. Amer. Microscop. Soc., 75:418, figs. 21–23, 37–39, map; 1963, *Ibid.*, 82:36.

Distribution. From eastern United States, eastern Mexico, Peru, to Argentina.

Collections. BRAZIL. *São Paulo*: forest of botanical garden, in shrubs in curled up leaves, ♀. *Est. Guanabara*: dense web in shrubs, Barra da Tijuca, ♀.

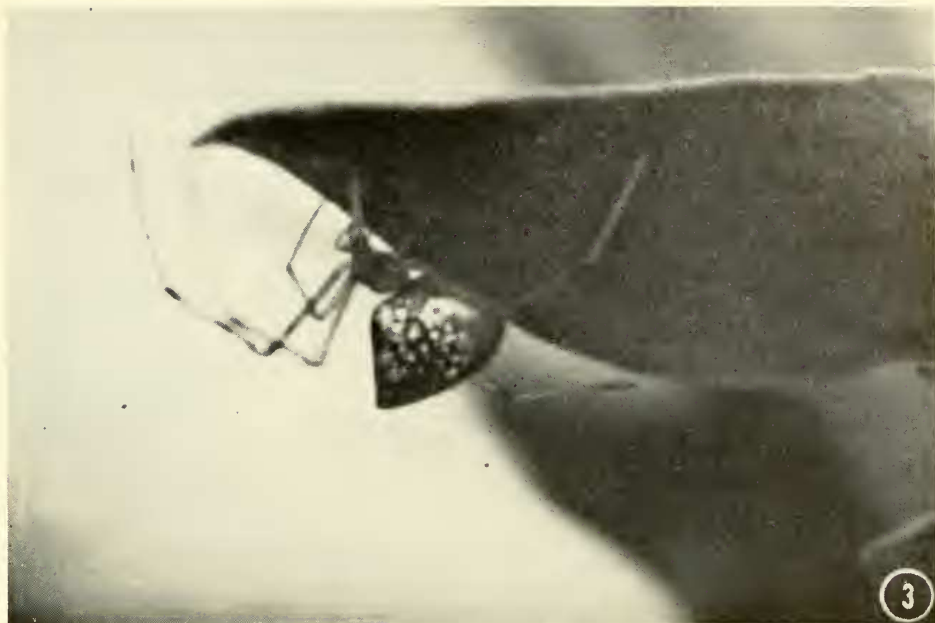


Figure 3. *Thwaitesia affinis* O. P.-Cambridge. Female under leaves near São Paulo, Brazil.

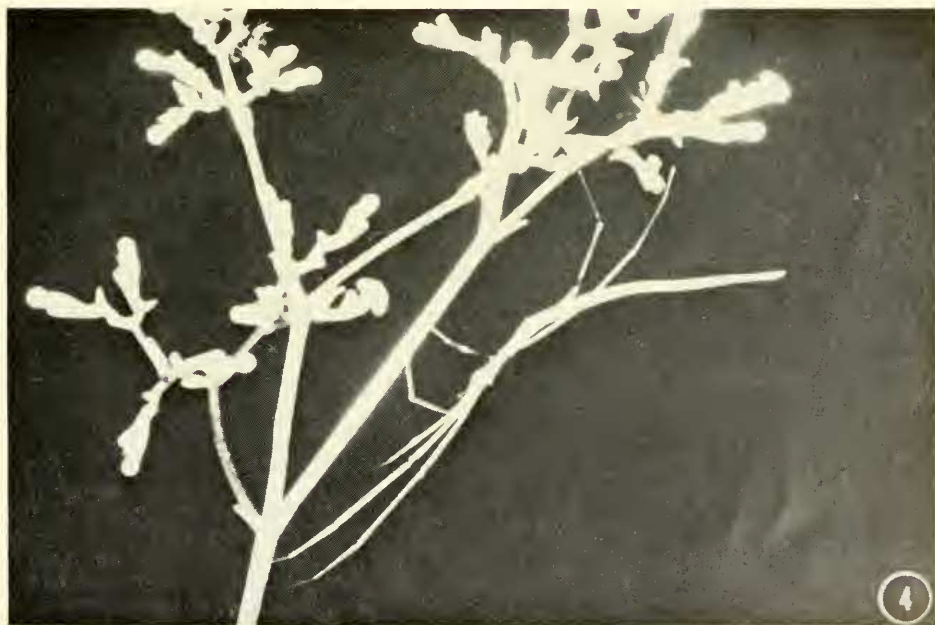


Figure 4. *Argyrades longissimus* (Keyserling). Collected sweeping along forest, Urubamba River near Machu-Picchu, Cuzco, Peru; picture taken several minutes after being placed on a plant.

Wirada tijuca sp. n.

Figures 28–31

Holotype. Male from Pico da Tijuca, 500–950 m, in forest, Rio de Janeiro, Est. Guanabara, Brazil, 17 April 1965 (H. Levi), in the Museum of Comparative Zoology. The specific name is a noun in apposition, after the type locality.

Description. The whole animal is brown to black, depending on the amount of sclerotization. Carapace and sternum with tubercles. Anterior median eyes largest, almost touching, less than their radius from laterals. Posterior median eyes more than two diameters apart, one diameter from laterals. Dorsum of abdomen is a circular, convex, heavily sclerotized, highly polished disc (Fig. 28). Venter with sclerotized plates as in Figure 29, the dorsal plate overhanging all around. Total length, 1.5 mm. Carapace 0.57 mm long, 0.65 mm wide. First femur, 0.54 mm; patella and tibia, 0.50 mm; metatarsus, 0.30 mm; tarsus, 0.30 mm. Second patella and tibia, 0.44 mm; third, 0.40 mm; fourth, 0.50 mm.

Diagnosis. This species is separated from the other two species of *Wirada*, known from Venezuela to Ecuador, by the structure of the palpus (Figs. 30, 31).

Argyrodes longissimus (Keyserling)

Figure 4

Ariamnes longissimus Keyserling, 1891, Die Spinnen Amerikas, 3:202, pl. 7, fig. 145. Syntypes from Est. Rio de Janeiro, Brazil, in the British Museum; examined.

Argyrodes longissimus, Exline and Levi, 1962, Bull. Mus. Comp. Zool., 127:127, figs. 100–109, ♀ ♂, map 4.

Collection. PERU. *Cuzco*: An adult male was collected by sweeping in the rain forest along the Urubamba River near Machu-Picchu ruins at 2,000 m, 21 Feb. 1965. The species had previously been known only from southeastern Brazil. It was green in color when alive (Fig. 4).

Argyrodes brasiliensis (Mello-Leitão),
new combination

Rhomphaca brasiliensis Mello-Leitão, 1919 (1920), Rev. Soc. Brasileira Sci., 3:174. Mature holo-

type from Pinheiro, Est. Rio de Janeiro, Brazil, in the Museu Nacional, Rio de Janeiro; examined.

Argyrodes honestus Exline and Levi, 1962, Bull. Mus. Comp. Zool., 127:110, figs. 14–15, 41–43, ♀ ♂, map 2. Male holotype from Nova Teutônia, Santa Catarina, in the Senckenberg Museum, Frankfurt. NEW SYNONYMY.

Distribution. Venezuela to southern Brazil.

Argyrodes projiciens (O. P.-Cambridge)

Rhomphaca projiciens O. P.-Cambridge, 1896, Biologia Centrali-Americana, Araneidea, 1: 186, pl. 23, figs. 9, 10. Male, female syntypes from Teapa, Tabasco, Mexico, in the British Museum; examined.

Ariamnes feioi Mello-Leitão, 1947, Bol. Mus. Nac., Rio de Janeiro, N. S., Zool., 80:10, fig. 46. Female holotype from Rio Clara, Minas Gerais, Brazil, in the Museu Nacional, Rio de Janeiro; examined. NEW SYNONYMY.

Argyrodes projiciens, Exline and Levi, 1962, Bull. Mus. Comp. Zool., 127:106, figs. 8–10, 29–31, ♀ ♂, map 2.

Distribution. Southern United States to Paraguay.

Argyrodes altissimus (Mello-Leitão),
new combination

Figures 35–37

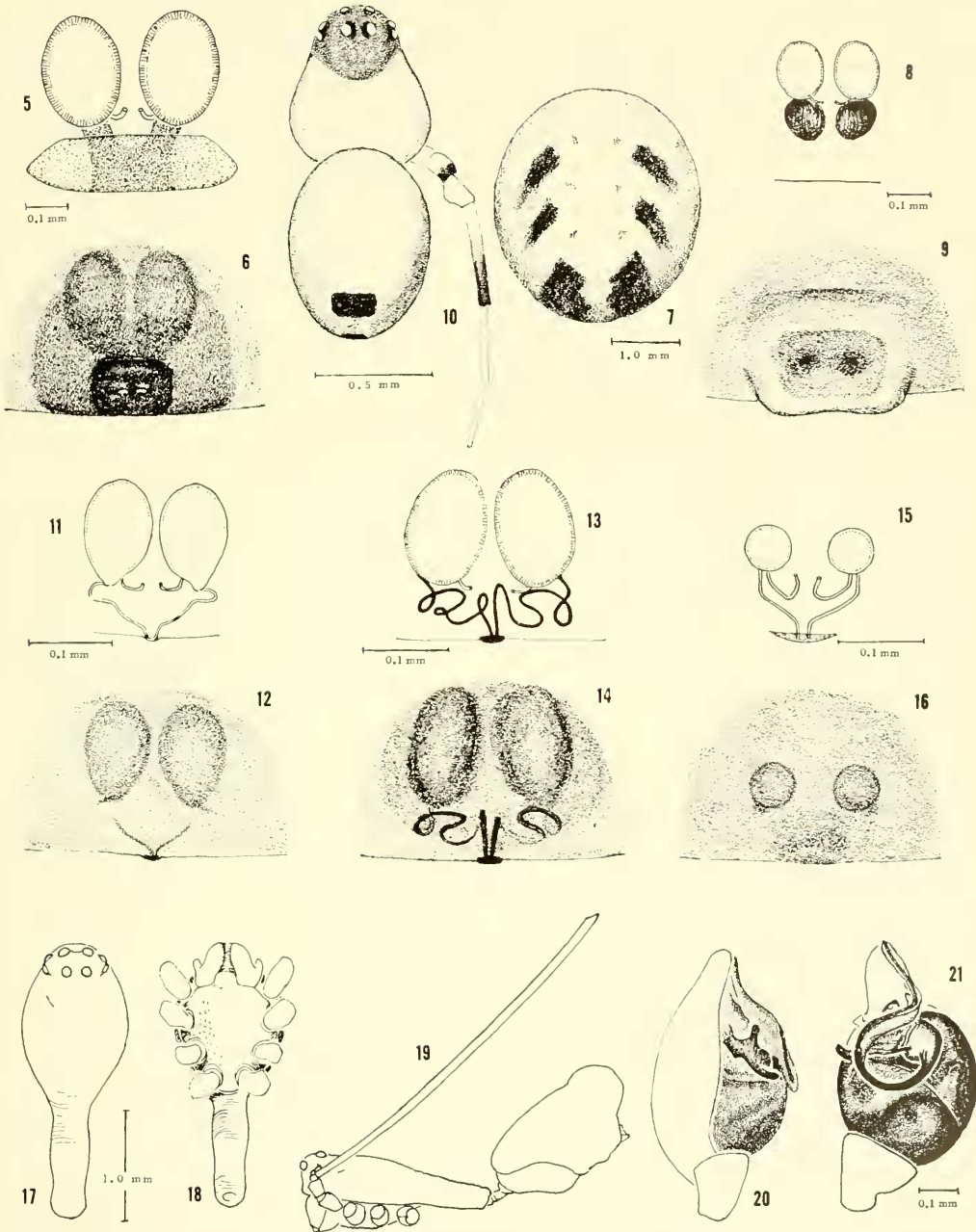
Rhomphaca altissima Mello-Leitão, 1941, Arq. Inst. São Paulo, 11:249. Female holotype from Rio Negro, Paraná, Brazil, in the Museu Nacional, Rio de Janeiro; examined.

The single specimen examined is very close to *A. projiciens*; however, it differs in having the opening of the epigynum (Fig. 37) more anterior than in any specimen of the latter species examined. Thus it is believed to belong to a separate species.

Argyrodes elevatus Taczanowski

Argyrodes elevatus Taczanowski, 1872 (1873), Horae Soc. Ent. Rossicae, 9:120, pl. 5, fig. 12. Female holotype from Uassa, French Guiana [Rio Uaça, Amapa, Brazil] in the Polish Academy of Sciences; examined.—Exline and Levi, 1962, Bull. Mus. Comp. Zool., 127:134, figs. 128–132, ♀ ♂, map 5.

Conopistha friburgensis Mello-Leitão, 1943, An. Acad. Brasileira Cienc., 15:259. Female holotype from [Nova] Friburgo, [Est.] Rio de



Figures 5, 6. *Achaearanea argea* sp. n. 5. Female genitalia, dorsal view. 6. Epigynum.
 Figures 7-9. *Theridion humbaldi* sp. n. 7. Dorsal view of abdomen of female. 8. Female genitalia, dorsal view. 9. Epigynum.
 Figures 10-12. *Thymaites pala* sp. n. 10. Female, dorsal view. 11. Female genitalia, dorsal view. 12. Epigynum.
 Figures 13, 14. *Thymaites urubamba* sp. n. 13. Female genitalia, dorsal view. 14. Epigynum.
 Figures 15, 16. *Thymaites machu* sp. n. 15. Female genitalia, dorsal view. 16. Epigynum.
 Figures 17-21. *Helvibis chilensis* (Keyserling). 17. Dorsal view of male carapace. 18. Male sternum, caxae and pedicel.
 19. Male lateral view. 20, 21. Left palpus. 20. Mesal view. 21. Ventral view.

Janeiro, in the Museu Nacional, Rio de Janeiro; examined. NEW SYNONYMY.

Conopistha pickeli Mello-Leitão, 1943, An. Acad. Brasileira Cienc., 15:259. Female holotype from Tapera, Pernambuco, Brazil, in the Museu Nacional, Rio de Janeiro; examined. NEW SYNONYMY.

Distribution. Southern United States to Peru and Argentina, probably Chile.

Collections. This seems to be by far the most common *Argyroides* in the webs of *Nephila* and *Argiope* in the São Paulo and Rio de Janeiro, Brazil, areas. It was also collected in the Serra dos Orgãos at 1,500 m and in the dry surroundings of Santiago del Estero, Argentina.

Argyroides solidao sp. n.

Figures 32–34

Holotype. Female from roadside orb web, Açude da Solidao, Alto da Tijuca, Est. Guanabara, 17 April 1965 (J. Becker, H. Levi), in the Museum of Comparative Zoology. The specific name is a noun in apposition, after the type locality.

Description. Carapace, sternum, dark brown. Legs brown. Abdomen with silver spots on black, dorsum much darker than venter, mostly black. A broad black band on posterior from the humps to the spinnerets. Anterior median eyes larger than others, one and one-half diameters apart, two-thirds diameter from laterals. Posterior median eyes two diameters apart, about one diameter from laterals. Abdomen as illustrated by Figure 34. Total length, 2.9 mm. Carapace, 1.0 mm long, 0.6 mm wide. First femur, 1.6 mm; patella and tibia, 1.7 mm; metatarsus, 0.8 mm; tarsus, 0.5 mm. Second patella and tibia, 0.9 mm; third, 0.4 mm; fourth, 0.6 mm.

Diagnosis. The epigynum was taken off and examined by phase microscope but the exact course of the duct could not be followed. However, the loop of the duct from the opening between the seminal receptacle and the wall of the epigynum separates this species from *Argyroides affinis* O. P.-Cambridge, and the coiled duct (Fig. 32) from those having similar epigyna.

Record. Female paratype collected with holotype.

Steatoda andina (Keyserling)

Lithyphantes andinus Keyserling, 1884, Die Spinnen Amerikas, 2(1):132, pl. 6, fig. 82, ♀ ♂. Syntypes from Junín, Amable María, Lima and San Mateo, Peru, in the Polish Academy of Sciences, Warsaw.

Steatoda andina, Levi, 1962, Psyche, 69:26, figs. 16–19, ♀ ♂, map.

Distribution. From northern Venezuela to northern Chile.

Record. PERU. Lima: on loma in desert under stone, Atocongo near Pachacamac, ♀, 7 Feb. 1965. Cuzco: Cuzco, 3,200 m, Feb. 1965 (F. Carrasco).

Steatoda diamantina Levi

Steatoda diamantina Levi, 1962, Psyche, 69:31, figs. 28–30. Female holotype from Diamantina, Minas Gerais, Brazil, in the American Museum of Natural History.

One specimen, probably collected under bark, 33 km S of São Paulo, Brazil, differs in proportions of some soft parts of the palpus from the paratype illustrated.

Steatoda chinchiipe Levi

Steatoda chinchiipe Levi, 1962, Psyche, 69:32, figs. 31, 32, ♀. Female holotype from Rio Chinchipe, Cajamarca, Peru, in the Museum of Comparative Zoology.

Distribution. Ecuador, Cajamarca, Junín, Peru.

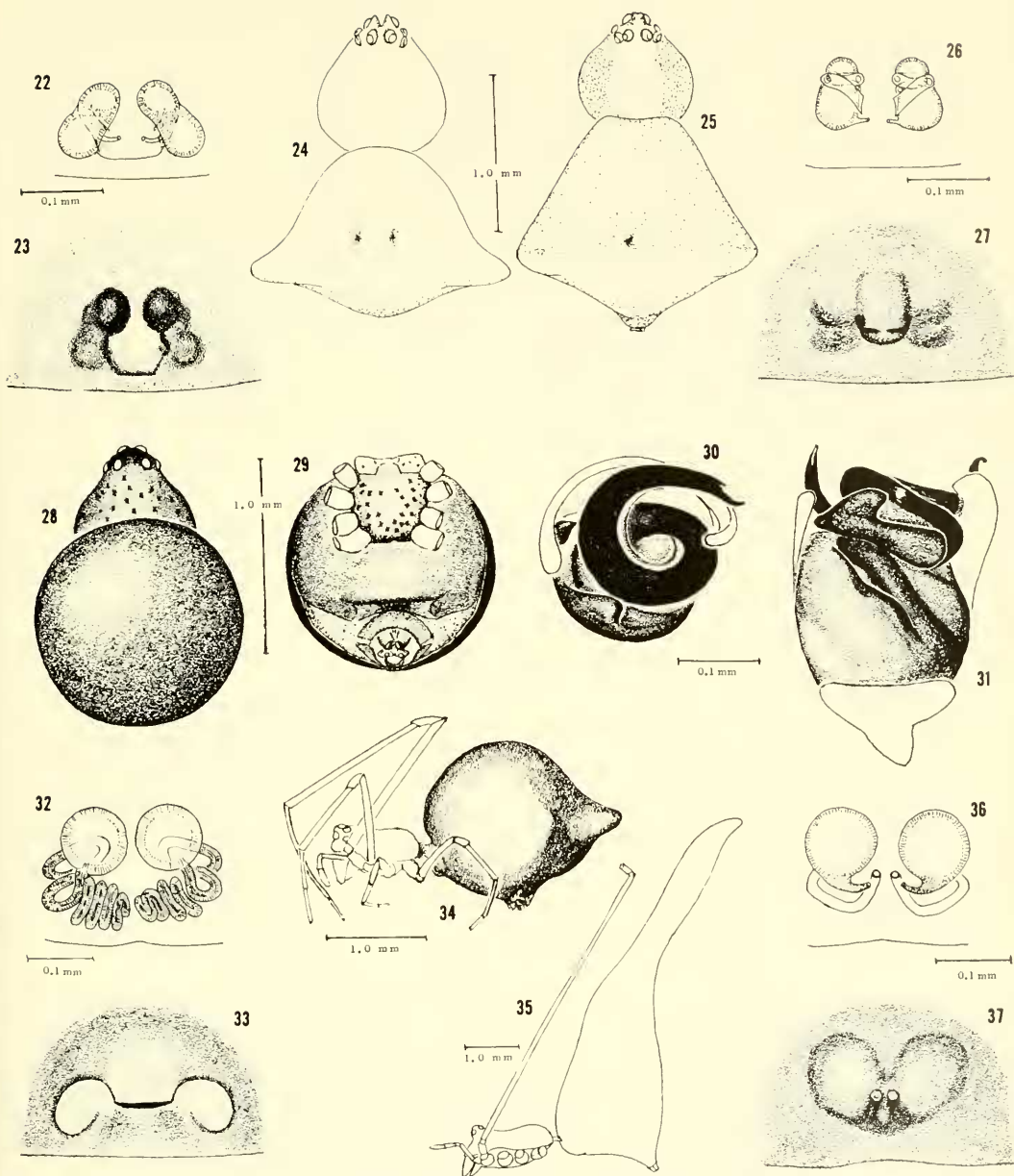
Record. PERU. Junín: San Ramón, 800 m, in wet rain forest area, 1 ♀, Feb. 1965.

Dipoena mendoza sp. n.

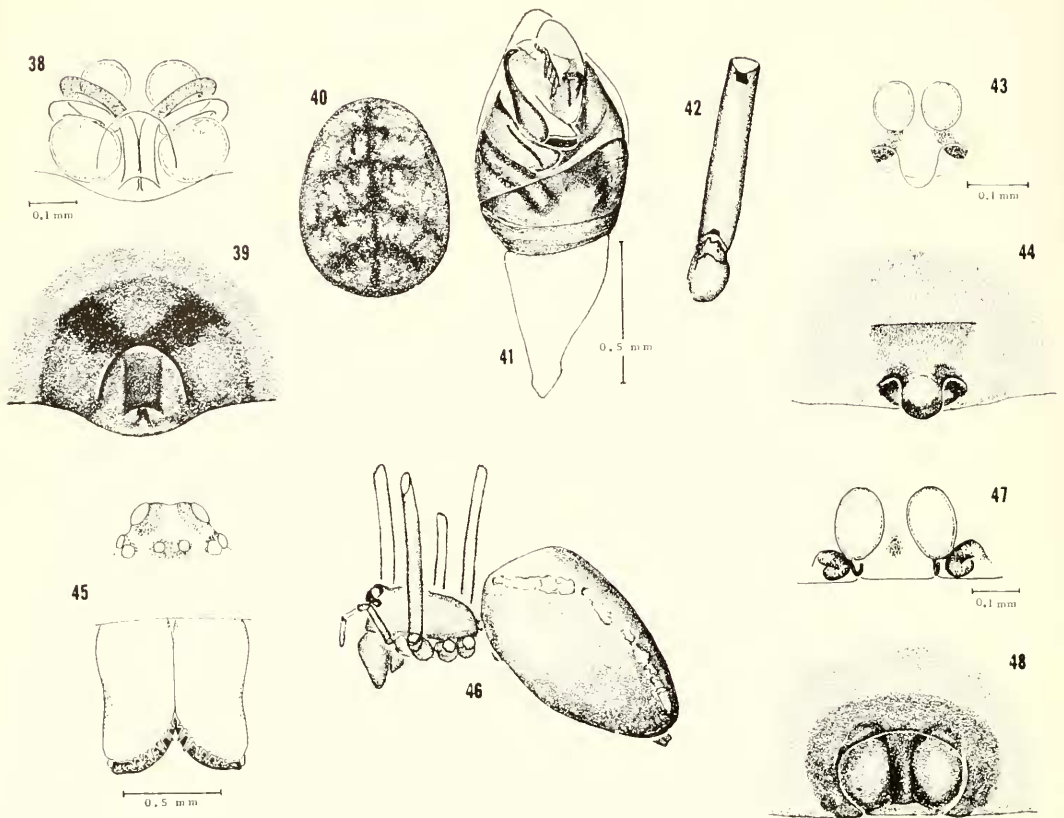
Figures 38–40

Holotype. Female from Mendoza, 900 m. Province Mendoza, Argentina, 30–31 March 1965 (H. Levi), in the Museum of Comparative Zoology. The specific name is a noun in apposition after the type locality.

Description. Carapace, sternum, dark brown. All except last coxae dark brown. Coxae of fourth legs colorless. Proximal ends of femora light, distal ends brown. Patellae brown, all other leg segments darker, with distal end darkest. Dorsum of



Figures 22-24. *Episinus rio* sp. n. 22. Female genitalia, dorsal view. 23. Epigynum. 24. Female, dorsal view.
 Figures 25-27. *Episinus cuzco* sp. n. 25. Female, dorsal view. 26. Female genitalia, dorsal view. 27. Epigynum.
 Figures 28-31. *Wirada tijuca* sp. n. 28. Male, dorsal view. 29. Male, ventral view. 30, 31. Left palpus. 30. Apical view. 31. Ventral view.
 Figures 32-34. *Argyrades salidao* sp. n. 32. Female genitalia, dorsal view. 33. Epigynum. 34. Female, lateral view.
 Figures 35-37. *Argyrades altissimus* (Mella-Leitão). 35. Female, lateral view. 36. Female genitalia, dorsal view. 37. Epigynum.



Figures 38–40. *Dipoena mendaza* sp. n. 38. Epigynum, cleared. 39. Epigynum. 40. Female abdomen, dorsal view. Figure 41. *Steatoda diamantina* Levi; left palpus (São Paulo). Figures 42–44. *Mangara lida* (Mello-Leitão). 42. Ventral view of second left femur. 43. Female genitalia, dorsal view. 44. Epigynum. Figures 45–48. *Dubiaranea argenteovittata* Mello-Leitão. 45. Anterior view of eye area and chelicerae. 46. Female, lateral view. 47. Female genitalia, dorsal view. 48. Epigynum.

abdomen mottled gray (Fig. 40), venter uniform gray. Chelicerae half the size of clypeus. Eyes subequal in size. Anterior median eyes one diameter apart, almost touching laterals; posterior median eyes less than their diameter apart, one and one-half diameters from laterals. Abdomen ovoid in shape, widest posterior of the middle. Total length, 3.4 mm. Carapace 2.5 mm long, 2.4 mm wide. First femur, 3.5 mm; patella and tibia, 4.0 mm; metatarsus, 3.1 mm; tarsus, 1.1 mm. Second patella and tibia, 2.6 mm; third, 2.1 mm; fourth, 3.5 mm.

Diagnosis. This species differs from all

other *Dipocua* by the sclerotized arch-shaped ridge on the epigynum (Fig. 39), and by the two coils (Fig. 38), one anterior to the other, between the seminal receptacles on each side.

Dipoena polita (Mello-Leitão)

Theridula polita Mello-Leitão, 1947, Papéis Avulsos, Dept. Zool., São Paulo, 8(11):127. Female holotype from Santa Cruz, Est. Paraná, Brazil, apparently lost.

The coloration, shape, and proportions of the species, particularly the black stripe on the anterior side of the first and second leg suggest that this species belongs to *Dipoena*,

not *Theridula*. Judging by the primitive illustration, it may be *D. militaris* Chickerling, 1943, one of the common, widespread *Dipoena* species of South America.

MISPLACED SPECIES

LINYPHIIDAE

DUBIARANEA Mello-Leitão

Dubiaranea Mello-Leitão, 1943, Arq. Mus. Nac., Rio de Janeiro, 37:166. Type species by original designation and monotypy: *D. argenteovittata*. It had been placed in the family Theridiidae.

Dubiaranea argenteovittata Mello-Leitão Figures 45–48

Dubiaranea argenteovittata Mello-Leitão, 1943, Arq. Mus. Nac., Rio de Janeiro, 37:167, fig. 10, ♀. Female holotype from Rio Grande do Sul, in the Museu Nacional, Rio de Janeiro; examined.

Additional description. Total length, 4.8 mm. Carapace, 1.8 mm long, 1.1 mm wide. First femur, 2.4 mm; second, 2.1 mm; third, 1.5 mm; fourth, 2.1 mm. The epigynum (Fig. 48) has an indistinct rim around a transparent raised area. The large colulus, structure of the carapace, remaining leg spines, and the structure of the chelicerae (Fig. 45) indicate that the species is a linyphiid.

ARANEIDAE

Mangora fida (Mello-Leitão), new combination

Figures 42–44

Theridion fidum Mello-Leitão, 1943, Arq. Mus. Nac., Rio de Janeiro, 37:169, fig. 13, ♀. Female holotype from Rio Grande do Sul, in the Museu Nacional, Rio de Janeiro; examined.

Additional description. Both ends of each femur have a black spot on the venter (Fig. 42). The third tibia, as in other *Mangora* species, has on its anterior surface a row of thin hairs. Total length, 3 mm. Carapace 2.4 mm long, 1.9 mm wide. First patella and tibia, 1.6 mm.

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